

STATE WATER RESOURCES CONTROL BOARD
WORKSHOP SESSION--DIVISION OF WATER QUALITY
MAY 3, 2005

ITEM 3

SUBJECT

CONSIDERATION OF A RESOLUTION APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE SANTA ANA RIVER BASIN TO INCORPORATE NUTRIENT TOTAL MAXIMUM DAILY LOADS (TMDLs) FOR LAKE ELSINORE AND CANYON LAKE

DISCUSSION

The Santa Ana Regional Water Quality Control Board (Santa Ana Water Board) adopted the revised Water Quality Control Plan for the Santa Ana Region (Basin Plan) under Resolution No. 94-01 on March 11, 1994. The revised Basin Plan was approved by the State Water Resources Control Board (State Water Board) on July 21, 1994, by the Office of Administrative Law (OAL) on January 24, 1995, and, in part, by the U.S. Environmental Protection Agency (USEPA) on May 30, 2000.

Lake Elsinore and Canyon Lake, located in the San Jacinto watershed, are not attaining water quality standards due to excessive nutrients (nitrogen and phosphorus). Lake Elsinore experiences extreme fluctuations in water level, with alternate periods of dry lakebed and extreme flooding. The drought/flood cycles experienced in the San Jacinto watershed greatly impacts lake water quality, causing fish kills and excessive algae blooms. As a result, in 1994, the Santa Ana Water Board placed Lake Elsinore on the federal Clean Water Act section 303(d) list due to excessive nutrients and organic enrichment/low dissolved oxygen. Canyon Lake is upstream of Lake Elsinore in the watershed, collecting most of the runoff; it maintains a more stable water level and has a less severe eutrophication problem. However, periods of algal bloom and occasional fish kills were noted; therefore, in 1998, the Santa Ana Water Board added Canyon Lake to the 303(d) list due to excessive levels of nutrients.

On December 20, 2004, the Santa Ana Water Board adopted Resolution No. R8-2004-0037 ([Attachment 1](#)) to amend Chapter 5 of the Basin Plan to incorporate a nutrient TMDL for the control of nitrogen and phosphorus as factors contributing to the excessive algae growth and low dissolved oxygen in Lake Elsinore and Canyon Lake. The TMDL is intended to achieve compliance with existing Basin Plan water quality objectives to prevent excessive algae growth and low dissolved oxygen. The Basin Plan amendment specifies final numeric targets for total phosphorus and total nitrogen for both Lake Elsinore and Canyon Lake and also specifies interim and final numeric targets for chlorophyll a and dissolved oxygen for both lakes. Monitoring these parameters will provide a method of tracking improvements in water quality resulting from reduction in the loading of nitrogen and phosphorus.

The Basin Plan amendment specifies final TMDL wasteload allocations for point source discharges and load allocations for nonpoint source discharges for total nitrogen and total phosphorus for both Lake Elsinore and Canyon Lake. Finally, the Basin Plan amendment specifies an implementation plan for nutrient reduction in both lakes, which includes compliance schedules to meet interim numeric targets as soon as possible, but not later than 2015, and the final numeric targets by 2020, as well as a monitoring program to track progress toward compliance.

Final numeric targets included in the TMDL are:

- 1) Total phosphorus – both lakes: annual average not greater than 0.1 milligram per liter (mg/L).
- 2) Total nitrogen – both lakes: annual average not greater than 0.75 mg/L.
- 3) Ammonia nitrogen – both lakes: calculated concentrations
Acute: 1-hour average concentration (mg/L) not to exceed, more than once every three years on the average, the acute criteria (calculation see Attachment to Resolution No. R8-2004-0037, Table 5-9n).
Chronic: thirty day average concentration (mg/L) not to exceed, more than once every three years on the average, the chronic criteria (calculation see Attachment to Resolution No. R8-2004-0037, Table 5-9n).
- 4) Chlorophyll a – Lake Elsinore: summer average not greater than 25 mg/L. Canyon Lake: annual average not greater than 25 mg/L.
- 5) Dissolved oxygen – Lake Elsinore: not less than 5 mg/L 1 meter above lake bottom.
Canyon Lake: daily average in hypolimnion not less than 5 mg/L.

The TMDL for each water body distributes the portions of the water body's assimilative capacity to various pollution sources so that the water body achieves its water quality standards. The Santa Ana Water Board supports the trading of pollutant allocations among sources, where appropriate, such as between point/point, point/nonpoint, and nonpoint/nonpoint pollutant sources. Optimizing alternative point and nonpoint control strategies through allocation tradeoffs may be a cost-effective way to achieve pollution reduction benefits. As implementation and monitoring results develop, review and possible revision of nutrient water quality objectives is set for December 31, 2009, and review of TMDLs, wasteload allocations, and load allocations is scheduled once every three years to coincide with the Santa Ana Water Board triennial review. The proposed Basin Plan amendment includes an implementation plan with phased TMDL and time to conduct monitoring and assessment, including development of in-lake dynamic models and refinement of the existing San Jacinto watershed model, the results of which may provide a basis for modifying elements of the TMDLs as indicated in the scheduled reviews.

Implementation actions for the Santa Ana Water Board include: (1) Establish new waste discharge requirements, including issuing a new National Pollutant Discharge Elimination System (NPDES) permit to Elsinore Valley Municipal Water District for supplemental water discharges to Canyon Lake with appropriate waste load allocations, compliance schedule, and monitoring program requirements; (2) Permit other existing or proposed nutrient discharges as appropriate; (3) Revise existing waste discharge requirements in NPDES permits to include appropriate waste load allocations, compliance schedules, and monitoring program requirements for:

- Riverside County Flood Control and Water Conservation District, the County of Riverside, and the incorporated cities of Riverside County within the Santa Ana Region;
- General Waste Discharge Requirements for Concentrated Animal Feeding Operations (dairies and related facilities) within the Santa Ana Region;
- Waste Discharge and Producer/User Reclamation Requirements for the Elsinore Valley Municipal Water District, Regional Water Reclamation Facility, Riverside County;
- Waste Discharge Requirements for Eastern Municipal Water District Regional Water Reclamation System, Riverside County;
- Watershed-Wide Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with New Developments in the San Jacinto watershed;
- Waste Discharge Requirements for U.S. Air Force March Air Reserve Base Storm Water Runoff, Riverside County; and

(4) Review/Revise Water Quality Objectives in the Basin Plan to establish site specific nutrient criteria for Lake Elsinore and Canyon Lake. The Santa Ana Water Board intends to consider revision of nutrient water quality objectives for both lakes; however, given budgetary constraints, this effort is likely to require substantial resource contributions from interested parties.

Implementation actions for other agencies/entities include: (1) Santa Ana Water Board will identify agricultural operators within the San Jacinto watershed; then require that the agricultural operators develop and implement a Nutrient Management Plan; (2) Public education, septic system maintenance, and septic system maintenance enforcement is the responsibility of Riverside County Health Department and certain municipalities with their own oversight and permitting program. Santa Ana Water Board will require that the Riverside County Health Department develop and implement a Septic System Management Plan, to be coordinated with any new requirements established by Assembly Bill 885; (3) Revise and implement the County of Riverside Drainage Area Management Plan (DAMP) by the Riverside County Flood Control and Water Conservation District and co-permittees in the San Jacinto watershed to describe the measures to comply with this TMDL. Provisions specified in the Areawide Stormwater Permit may suffice to address TMDL requirements (provisions of the DAMP and the Water Quality Management Plan); (4) Update the Caltrans Stormwater Management Plan and Regional Plan to address nutrient discharges from highway facilities and construction; (5) Update the U.S. Air Force March Reserve Base Stormwater Pollution Prevention Plan to address nutrient discharges from the Air Reserve Base; (6) Revise and implement the San Bernardino National Forest and Cleveland National Forest Management Plans, to address nutrient discharges; (7) Develop and implement a plan to address the in-lake nutrient loads in Lake Elsinore by agricultural operators, Confined Animal Feeding Operation operators, Riverside County Flood Control and Water Conservation District and co-permittees, Caltrans, U.S. Air Force March Reserve Base March Joint Powers Authority, Riverside County Health Department, and U.S. Forest Service; and (8) Evaluate in-lake treatment options to control internal nutrient loading in Canyon Lake (include but not limited to alum treatment, aeration/oxygenation, dredging, and biomanipulation) by agricultural operators, Confined Animal Feeding Operation operators, Riverside County Flood Control and Water Conservation District and co-permittees, Caltrans, U.S. Air Force March Reserve Base March Joint Powers Authority, Riverside County Health Department, and U.S. Forest Service.

The Lake Elsinore and Canyon Lake Nutrient TMDLs include an implicit margin of safety including: (1) Derivation of numeric targets based on the 25th percentile of data for Lake Elsinore, Canyon Lake numeric targets to be consistent with those for Lake Elsinore; (2) Use of multiple numeric targets to measure attainment of beneficial uses and thereby assure TMDL efficacy; (3) Use of conservative literature values in the absence of site-specific data for source loading rates in the watershed nutrient model; (4) Use of conservative assumptions in modeling the response of Lake Elsinore and Canyon Lake to nutrient loads; and (5) Require load reductions to be accomplished during hydrological conditions when model results indicate, in some instances, that theoretical loads could be higher.

State Water Board staff review of the proposed amendment identified items that required clarification subsequent to Santa Ana Water Board adoption. Santa Ana Water Board Resolution No. R8-2004-0037 authorizes the Santa Ana Water Board Executive Officer to make minor, non-substantive corrections to the language of the amendment, if needed, for clarity or consistency. By memorandum dated April 19, 2005 (Attachment 2), the Santa Ana Water Board Executive Officer made necessary non-substantive clarifications to the amendment.

POLICY ISSUE

Should the State Water Board approve the amendment to the Basin Plan in accordance with the Staff Recommendation below?

FISCAL IMPACT

Santa Ana Water Board and State Water Board staff work associated with or resulting from this action can be accommodated within budgeted resources.

REGIONAL WATER BOARD IMPACT

Yes, Santa Ana Water Board.

STAFF RECOMMENDATION

That the State Water Board:

1. Approves the amendment to the Basin Plan as adopted under Santa Ana Water Board Resolution No. R8-2004-0037 (Attachment 1), as corrected by the Santa Ana Water Board Executive Officer's memorandum of April 19, 2005 (Attachment 2).
2. Authorizes the Executive Director or designee to submit the amendment and the administrative record for this action to OAL, and the TMDLs to USEPA for approval.

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 2005-

APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN
FOR THE SANTA ANA RIVER BASIN TO INCORPORATE NUTRIENT TOTAL MAXIMUM
DAILY LOADS (TMDLs) FOR LAKE ELSINORE AND CANYON LAKE

WHEREAS:

1. The Santa Ana Regional Water Quality Control Board (Santa Ana Water Board) adopted the Water Quality Control Plan for the Santa Ana Region (Basin Plan) under Resolution No. 94-01 on March 11, 1994, which was approved by the State Water Resources Control Board (State Water Board) on July 21, 1994, by the Office of Administrative Law (OAL) on January 24, 1995, and, in part, by the U.S. Environmental Protection Agency (USEPA) on May 30, 2000.
2. On December 20, 2004, the Santa Ana Water Board adopted Resolution No. R8-2004-0037 (Attachment 1) amending the Basin Plan by establishing a Nutrient TMDL for Lake Elsinore and Canyon Lake.
3. The State Water Board finds that the Nutrient TMDLs for Lake Elsinore and Canyon Lake are in conformance with requirements for TMDL development specified in section 303(d) of the federal Clean Water Act and State Water Board Resolution No. 68-16 and section 13242 of the California Water Code.
4. Santa Ana Water Board Resolution No. R8-2004-0037 delegated to the Santa Ana Water Board Executive Officer authority to make minor, non-substantive corrections to the adopted amendment if needed for clarity or consistency. The Santa Ana Water Board Executive Officer has made necessary corrections to the amendment (Attachment 2).
5. The Santa Ana Water Board staff prepared documents and followed procedures satisfying all environmental documentation requirements in accordance with the California Environmental Quality Act and other State laws and regulations.
6. This Basin Plan amendment does not become effective until approved by the State Water Board and until the regulatory provisions are approved by OAL. The USEPA must also approve the Nutrient TMDL for Lake Elsinore and Canyon Lake.

THEREFORE BE IT RESOLVED THAT:

The State Water Board:

1. Approves the amendment to the Basin Plan as adopted under Santa Ana Water Board Resolution No. R8-2004-0037 (Attachment 1), as corrected by the Santa Ana Water Board Executive Officer's memorandum of April 19, 2005 ([Attachment 2](#)).
2. Authorizes the Executive Director or designee to submit the amendment and the administrative record for this action to OAL, and the TMDLs to USEPA for approval.

CERTIFICATION

The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on May 19, 2005.

Debbie Irvin
Clerk to the Board